

中国废旧家电回收与有害物质替代 工作动态

Status of Chinese End-of-life Household Appliance Recycling and Hazardous Substance Substitution

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一、现状 Status

1. 中国废旧家电逐年快速上升

Chinese End-of-life Household Appliance is rise high speed for year

2 . 法律法规 Rule of laws

- ◆ **中华人民共和国固体废物污染环境防治法**（一九九五年十月三十日第八届全国人民代表大会常务委员会第十六次会议通过中华人民共和国主席令第98号公布）

People's Republic of China Environment Control Law for Solid Wastes Pollution (Implemented on April 1, 1996)

- **固体废物**，是指在生产建设、日常生活和其他活动中产生的污染环境的固态、半固态废弃物

Solid wastes refer to solid and half-solid waste substances produced during production, construction, daily life and other activities and polluting environment



1) 开展清洁生产，减少固体废物的产生量。

Initiating clean production, reducing solid wastes.

2) 集中处置固体废物。

Centralizing disposal of solid wastes.

3) 禁止中国境外的固体废物进境倾倒、堆放、处置。

Prohibiting dumping, stacking and disposal of solid wastes from overseas into China.

4) 露天贮存冶炼渣、化工渣、燃煤灰渣、废矿石、尾矿和其他工业固体废物的，应当设置专用的贮存设施、场所。

Laying up of smelt residues, chemical residues, coal combustion residues, waste ores, gangues and other industrial solid wastes in the open air, shall be provided with special storing facilities.

5) 法律责任。

Legal liability.



◆ **中华人民共和国海洋环境保护法** (2000-04-01 , 中华人民共和国主席令第26号)

People's Republic of China Ocean Environment Protection Law (Implemented on April 1, 2000)

- **海洋环境污染损害** , 是指直接或者间接地把物质或者能量引入海洋环境 ,

Ocean environment pollution refers to directly or indirectly introducing substances or energies into ocean environment.

1) 污染物排海总量控制。

Control of total amount of pollutant release into sea.

2) 缴纳排污费。

Imposing on pollutant release.

3) 防治陆源污染物对海洋环境的污染损害。

Control of pollution and damage of land pollutants to ocean environment.



3. 目前中国各部局制定的规章

Current regulations developed by individual departments

- ◆ 《关于加强废弃电子电气设备环境管理的公告》（2003年8月26日）国家环境保护总局发布

Bulletin Regarding to Strengthening Environment Management of WEEE (August 26, 2003) Issued by China National EPA

- ◆ 《电子信息产品污染防治管理办法》--信息产业部（2003年8月）

Administrative Methods for Controlling Pollution of IT Products (August 2003) Prepared by Ministry of IT Industry

- 从源头提升我国家电业的污染防治管理

Improving control and management of pollution caused by household appliance industry from the headstream.



◆ 《废旧家电及电子产品回收处理管理条例》--国家发展和改革委员会（2004年8月18日）

Rules for Recycling of End-of-life Household Appliances and Electronic Products --- Prepared by State Development and Reforming Commission

- ◆ 从终端进一步提升资源利用率、控制污染范围。

Further improving resource recycling rate and pollution control range from the end.

《办法》和《条例》正好可以覆盖我国家电业的整个产业链条，使得我国家电领域将因此有一个较为全面的环保法规加以规范。

"Methods" and "Rules" just cover the whole industry chain of Chinese household appliances, so that Chinese household appliance sector will be specified by a more comprehensive environment protection regulation.



◆ 《废弃电器及电子产品污染防治技术政策》--国家环保总局（2004年3月4日）

**Technical Policies for Controlling Pollution of WEEE ---
China National EPA (implemented on March 4, 2004)**

- 1) 国家通过适时发布、更新产品中禁止和限制使用的有毒有害物质名录，推行环境友好产品的绿色政府采购和市场准入制度，从源头逐步消除产品中有毒有害物质的使用。

The state promotes government's green purchase of environment friendly products and market admittance policies by publishing and updating a list of prohibited and restricted hazardous substances used in EEE products at a proper time, thus gradually phasing out use of hazardous substances in EEE products.



- 2) 建立相对完善的电子废物的回收体系，逐步提高电子废物的回收率和资源化利用率。

Establish relatively complete recovery system of E-wastes, gradually raise recovery and recycling rate.

- 3) 规范电子废物综合利用行为，控制环境污染；力争至2006年，电子废物资源化利用过程中产生的危险废物纳入到全国危险废物处置体系，并基本得到安全无害处置。促进生产企业采用绿色设计，从源头控制污染。

Specify actions of E-waste reuse and recycling, control environment pollution; by the year of 2006, hazardous wastes produced from E-waste recycling can be brought into the national hazardous waste disposal system and receive harmless disposal.

Encourage production enterprises to employ green design, thus controlling pollution for the headstream.



3 . 相关标准

Related standards

- ◆ 《关于在电气电子设备禁止使用某些有害物质指令》 -
-国家标准技术管理委员会 (正在进行)

Restriction on se of some hazardous substances in electrical and electronic equipment -China National Standardization Administrative Committee (under development)

- ◆ 《家用电器有害物质限值》 --中国家用电器标委会
(正在进行)

Limit of hazardous substances used in household appliances -China National Standardization Committee on Household Appliances (under development)



- ◆ 《电子电器产品有害物质测试方法》 --信息产业部
(正在进行)

Testing method for hazardous substances used in EEE products--- Ministry of IT Industry (under development)

- ◆ 〈产品标识〉 --中国质量认证中心 (正在进行)

Marking for products --- China Quality Certification Center (under Development)



二、回收处理情况

Recycling and disposal instance

1. 中国现有废旧电器及电子产品回收情况

Current recovery of end-of-life electrical and electronic products

- 1) 小商贩上门或临街零星收购，旧货市场收购、部分商店以旧换新收购。（拆解能用部件用于维修，或当废品卖掉、或当垃圾丢弃）

Peddleries purchase WEEE door-to-door or in shops and by twos and threes; used markets purchase WEEE; some retailers make collection by selling new one and taking back old one.(parts that can be removed and reused for repair, or parts that are sold as waster, or parts that are discarded as municipal wastes)



2) 不法商户，改电器外壳，以旧充新，以次充好--纠纷、火灾。

Illegal vendors change the enclosure of the Used appliance and sell it as new one - causing dispute and fire.

3) 境外废旧电器产品流入广东。

Oversea WEEE rush into Guangdong.

4) 运输工具简单、存放环境简陋--环境污染。

Transportation vehicles are simple and storage facilities are backward - polluting environment.



2. 处理手段

Treatment method

- 1) 工艺简单，露天焚烧、酸解提取金属--环境污染。

Treatment process is simple, burn WEEE in the open air or acid dissolution to get metals - polluting environment.

- 2) 手工作业，花去大量的劳动力，回收效率低。

Manual operation, much more labors are consumed, recovery rate is low.

- 3) 没有形成规模机械化处理，处理成本高。

Scale mechanic treatment hasn't formed, so treatment cost is high.



三 . 存在问题 Exist question

1 . 环境污染

Environment pollution

- 空气质量、水质、人体健康。

Air quality, water quality and human health.

2 . 资源浪费

Resources are wasted.

3 . 系统建立不完善

Incomplete system



四、造成问题的原因

◆ 1. 法规不到位

Rule of law cant't reach request

◆ 2. 环境意识有待加强

It is necessary to environment consciousness

◆ 3. 处理技术较低

Treatment technology lower

◆ 4. 专业化技术不够

Speciality technology not enough



五 . 欧盟指令实施带来的问题

Issues brought by implementation of EU directives

1) 两个指令给整个工业产业链带来重整。

Two directives make the whole industry chain reformed.

◆ **上游原材料控制**

how to control upstream raw materials

2) 现使用替代物后 , 工艺和评估存在问题。

After alternatives are employed, there are problems in process and assessment.



- 生产工艺发生变化
Production processes change.
- 评估项目选定
Choose assessment items.
- 评估依据的方法
Assessment method
- 评估的有效性
Assessment validity

3) 没有统一的标准、检测方法和评价。

No uniform standards, testing methods and assessment methods.

- 目前国内检测机构主要采用美国EPA ,
Currently, domestic testing bodies mainly employ US EPA standards.



- ◆ 检测设备有差异，TC111推荐用设备
Testing equipment differ. IEC TC111 recommends equipment.
- ◆ 检测结果一致性
Consistence of testing results

4) 缺乏对环境有利的回收利用技术服务。

Lack of recycling technical services that are environment-friendly.

- ◆ 政府没有明确从事该项服务的机构？
Governments haven't defined the organizations that can carry out this service?
- ◆ 政府没有明确该项服务政府考虑如何支助？
Governments haven't a definite program about how to fund this service?
- ◆ 回收技术服务开展业务活动范畴？
What activities do recycling technical services include?



六、发展动向 Development situation

1. 加快立法进程

Legislation is urgently needed.

2. 加大技术开发力度

Develop related technologies.



◆ **研究废旧家用电器及电子回收处理设备系统研究**
Research on WEEE treating and recycling facility system

- 研究电冰箱、空调器等产品的处理系统关键设备。
Research on key equipment of treatment system of end-of-life refrigerators and air conditioners
- 研究有害物质的收集、拆分、处理工艺。
Research on collection, dismantling and treatment technology.
- 研究拆分后，材料再生并加工成半成品。
Research on regeneration of material and production of semi-finished goods



◆ 研究电器附件环境设计指南

Research on guidance of environment design of electrical accessories

- 源头抓起，从设计产品开始考虑生态环境、生命周期和资源再利用（IECTR 62139:2004）。

Beginning with the headstream, eco-environment, life cycle and resource reuse are considered in the phase of product design.

- 由中国电器工业协会牵头，考虑电器产品环境意识设计。

Led by China Electrical Equipment Industry Association, environment design of electrical products shall be considered.



◆ 研究中国废旧电子电器回收率计算方法

Research on calculation method of Chinese WEEE recycling rate

据相关资料报道：我国目前也正在制订相同的法规，回收率拟订为40%。

As reported in related documents: China is currently developing similar regulations and the recycling rate is planned to be 40%.



3. 开展RoHS自愿认证。

Develop ROHS voluntary certification.

中国质量认证中心组织开展RoHS自愿认证

China Quality Certification Center organizes ROHS voluntary certification.

认证模式：型式试验+工厂质量体系审查+定期监督审查

Certification mode: type test + factory quality system examination + periodical supervision examination

4. 加强专业队伍建设。

Training of human resources.

对企业技术人员进行培训宣贯，推出专业人员

Training technical persons of enterprises to form a professional team.



5. 体系建设。 System construction.



七、WEEE和RoHS指令对中国家用电器出口影响 Impact of WEEE and RoHS directives on export of Chinese household appliances

- ◆ 技术门槛提高带来成本增加，削弱中国家电进军欧盟市场的价格优势和竞争实力。

Elevation of technical threshold raises cost, weakening price advantage and competition strength of Chinese household appliances in EU market.

- ◆ 在未达到两指令的要求前，造成出口数量减少。

Before complying with the two directives, decrease of exports occurs.

- ◆ 影响欧盟乃至全球经济增长。

Economic growth of EU or even the globe will be impacted.



八、合作意向 Cooperation intentions

- ◆ 废旧电器设备回收处理关键工艺与技术设备开发
Development of key processes and technical equipment for treating and recycling WEEE
- ◆ 检测方法和评价方法研究
Research on testing methods and assessment methods
- ◆ 绿色家电设计技术研究
Research on green design of household appliances
- ◆ 材料的分离与再生技术
Material separation and regeneration technologies
- ◆ 替代材料与工艺研究
Research on substitution materials and techniques
- ◆ 废旧家电及电子产品回收体系研究
Research on recovery system of WEEE



谢谢!
Thanks!